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| **Project 2.2.2 Knowledge of the Marketplace** |

Introduction

Market research is the process of systematically gathering, recording, and analyzing data about a product, process, or service; the customers; the competitors; and the market demand. The information gathered during market research can help a research engineer or designer make decisions, create a plan of action, fine tune an existing product or service, expand into new markets, or create a totally new invention. This process may result in a new product, process, or service.

You have already determined that the problem your team wants to solve exists and is valid. Now you want to ensure that the problem is worth solving so that your efforts are not wasted on developing a product that will not be used or purchased. This project will help you justify the effort and expense that will be required to solve the problem. The information you collect and organize for this project will become components of **Project 2.2.4 Problem Proposal**.

Equipment

* Internet access

Procedure

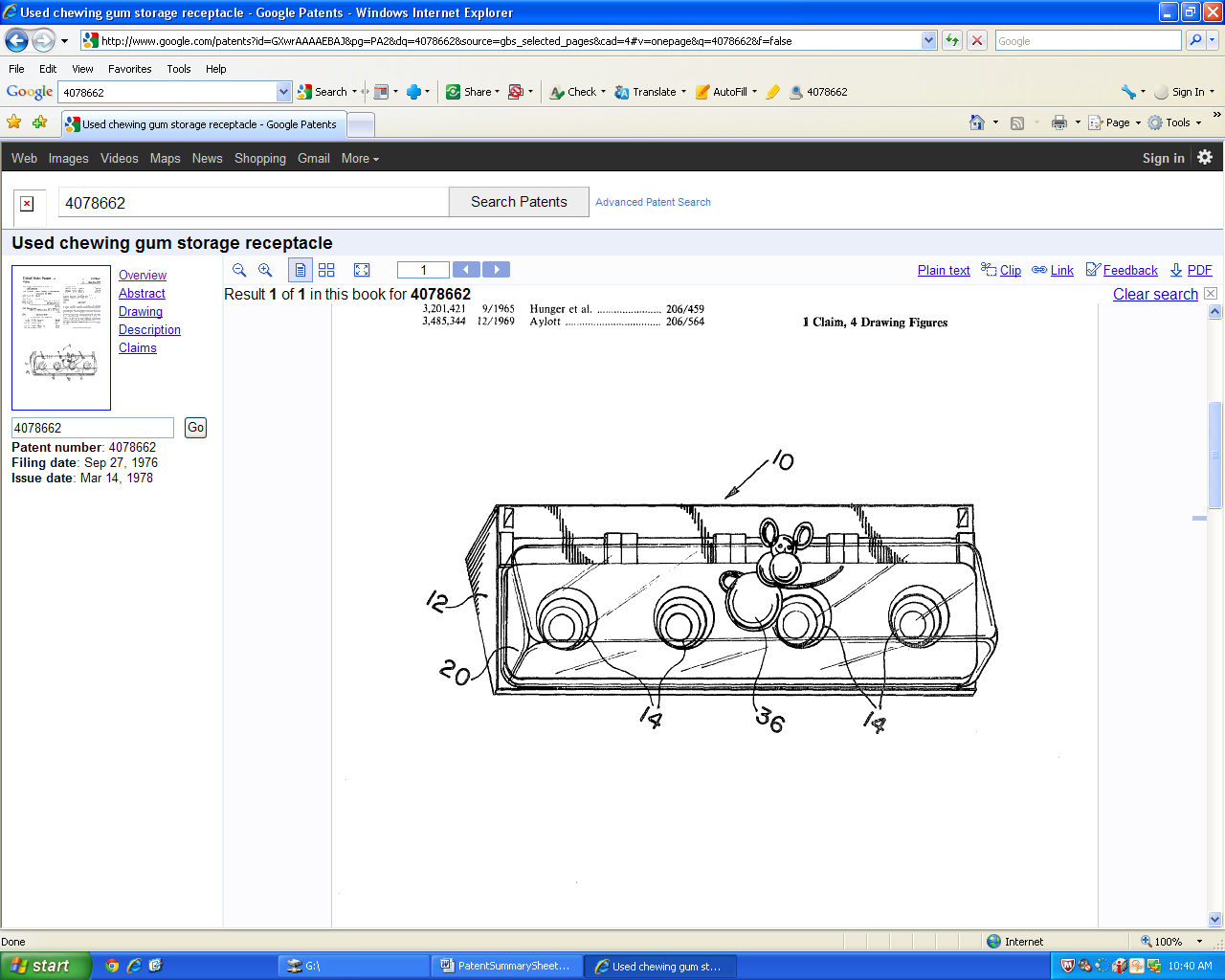
Gather information for each of the following sections of Project 2.2.4 Problem Proposal. Be sure to document all of your research and include, if applicable, contact information and references in the appropriate sections of your engineering notebook. Create a preliminary draft for each section, using the headings listed below, to present the required information. As with the technical writing that you have completed in other PLTW courses, all information should be succinct and well organized.

Existing Similar Products

Use your research from **Project 2.1.4 Choosing a Problem** and additional research, as necessary, to gather information about existing products that address your team’s problem. For each similar product that you identify, describe the product (including images), explain why the product solution falls short, and detail why your solution will be more valuable or desirable.

The research we conducted did not return any products currently in the market that approach the problem in the same way. All of the current products work to try and prevent gum from ending up on the ground because that is the main problem. If the problem of improperly disposed gum was eliminated, all of these products would not be needed. Therefore, even though such products as gum dispensers and pavement resistant coatings are hardly products similar to ours, they all provide competition. If everyone began using the gum dispensers, gum would not be found on the floor and would not be a problem by sticking to shoes.

**Chewed gum dispenser**

A used chewing gum receptacle that includes a base member in which a plurality of spaced recessed storage compartments are formed and a cover which is removable secured thereon. A disposable liner is provided with cup-like areas therein arranged in location and size to correspond with the storage compartments in the base. This product is fit for people to carry around in their pockets and store used pieces of gum until they can be disposed of somewhere else.

**Pave-Saver**

Due to its exceptional penetration and stain repellent properties, Pave-Saveris ideally suited to the protection of a wide variety of outdoor and indoor masonry surfaces that are subjected to heavy foot traffic. Pave-Saver protects stone and pavement surfaces from weathering and helps surfaces remain clean by repelling chewing gum, water, airborne dirt, acid rain, smog, industrial pollutants, oil and grease, dust and organic growth. Rain water will remove most stains as the pollutant is prevented from sticking to the substrate. Pave-Saver also prevents spilling through repeated freeze/thaw cycles. Once applied it is invisible, essentially forming part of the substrates fabric and therefore offering high resistance to abrasion. This product sound most like what our solution would work to do except on the opposing surface.

**GummyBins**

GummyBins are plastic gum dispensers that are meant to be installed in public places like on the streets or sometimes even in offices. They have an eye grabbing design that works to make the gum chewers want to dispose of their gum in those bins.

**Gum Targets**

The gum targets work on the same principle as do the gummy bins, they attract attention to themselves to have people want to stick their gum on the poster. A lot of them have faces and other pictures to attarct attention. Both of these products, work to minimize the gum disposed of on the ground as well as stuck on chairs and other furniture.

**Evaluating the Competition**

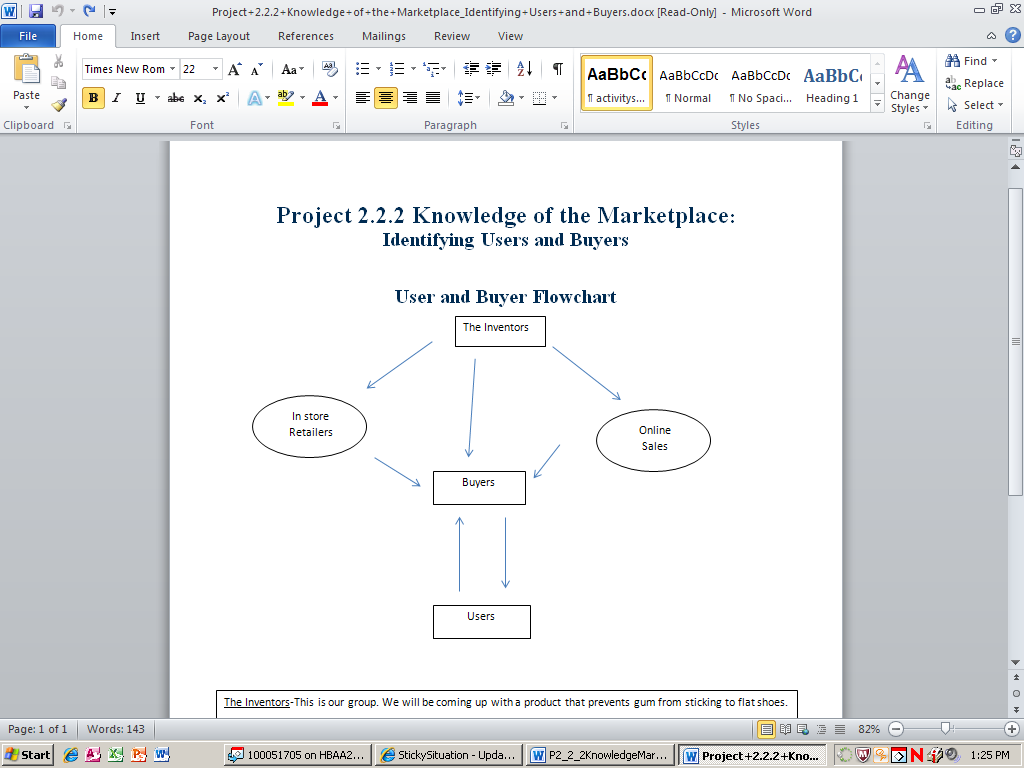
When examining the competition,you will likely detail some products or systems that you previewed when you were investigating similar products. While those are important to evaluate, it is especially important to consider how people are avoiding the problem or solving the problem in an unanticipated way.What is currently being done to avoid the problem might be your biggest competition. Consider asking people what they do to solve or avoid your problem. Remember to also consider unlikely competition. For example, bicycles and cars are different but do compete on a certain level.

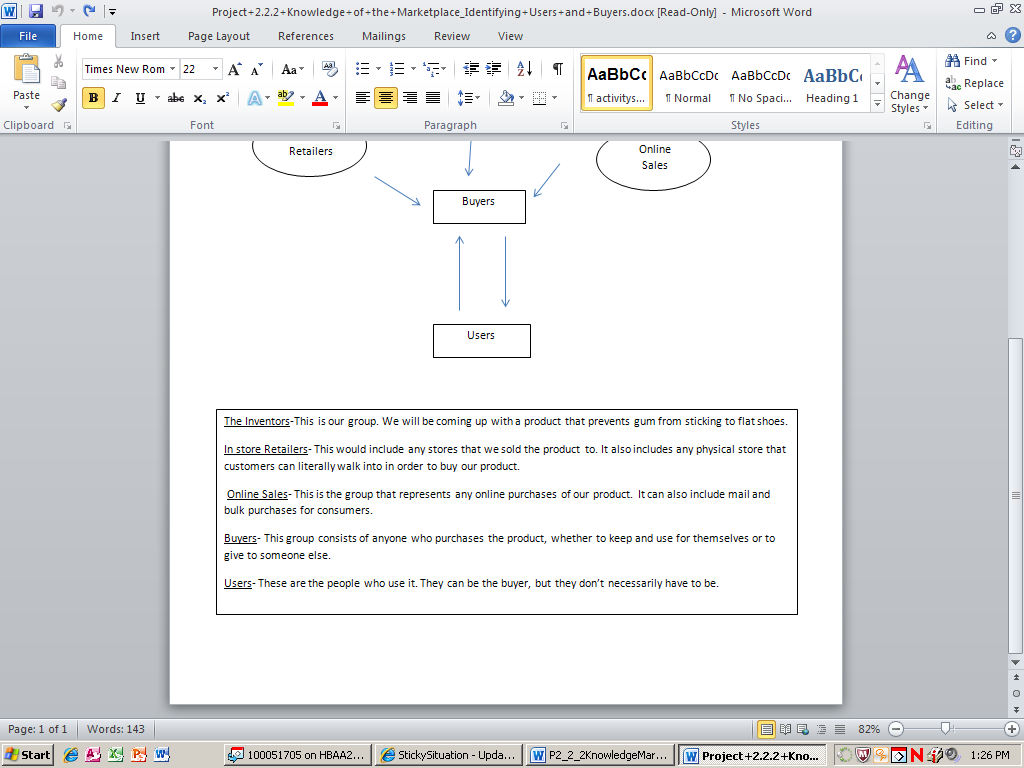
Answer these questions:

* Who/what are your major competitors?
  + Any gum removal sprays, machines companies, or anything that really removes gum. Some gum removal sprays and liquids include Goo Gone, Stel, Fast Out, WD-40, One company that is an expert in removing gum is The Gum Removal guy, and one machine that is great at removing gum is the KleenJet Gum- Exterminator.
* On what basis do you compete?
  + We are competing on the basis that we want to have the gum never get stuck to the person’s shoe in the first place.
* How do you compare?
  + We are going to offer our customers the chance to never get the gum stuck to the shoe in the first place, while these competitors have the gum already stuck to the shoe, and they are trying to remove it. Our product is hopefully going to be more appealing because you don’t have to go through the hassle of cleaning the gum of the shoe.
* Who are potential future competitors?
  + Our future competitors are going to be biodegradable gum companies. These products will let the gum degrade when it gets stuck to the floor or any surface. Now this product could be made where it can degrade in less than 10 minutes, or an hour (yet to be discovered). Now, if it degrades in a 10 minutes, the likelihood of someone stepping on the piece of gum is slim, thus reducing the purpose of our product.
* What are the barriers to entry for new competitors?
  + The barriers to entry for new competitors is having anything to do with gum removal and processes that would remove it.

Identifying Users and Buyers

This section will identify and describe in detail the anticipated users and buyers of your product. A graphic organizer is likely the best method for documentation. Include descriptive notes.





The Market

Specifically identify your anticipated target market (including, at a minimum, age, income, education level, and geographic location) and explain why this is or should be the target market. Many times demonstrating the existence of a market can be accomplished using indirect evidence. For example, if you propose to solve a problem with unintentional dialing of a particular model of cell phone, you can document evidence on the number of users of this model of cell phone. Make an educated guess to estimate what you believe could be your market share. Determine as accurately as possible the Total Available Market.

Target Audience: Teenage to adult women in the middle class living in large cities are our target audience.

We are targeting women with our solution because many of the shoes that women wear have flat bottoms. The reason that we chose women 16 or older was because we think that most of the gum that gets on shoes is from public places, such as jobs. 16 is about the age when people tend to start to looking for employment. We also are focused on big cities because more gum shows up on the ground in the city.

Justification

Justify the effort and expense that will be required to design a solution to your team’s problem by discussing the relative size of the target market and your preliminary plan to reach the target market.

There will be a lot of effort in trying to design a solution to our team’s problem because there are multiple parts and things we have to consider when making the product. For example, pressure, size of the shoe, size of the gum, etc. The expense will also be just as big. This is because we will have to test many pieces of gums, shoes, and different types of materials. Thus, we will be using a lot of money for each of our testing products and construction materials as well. Our target market is women in suburban areas that do a lot of walking from place to place in flat bottom shoes. We plan to reach this target market by going downtown and surveying women that are walking in the city.